



EAST KENTUCKY POWER COOPERATIVE

December 21, 2005

FACSIMILE AND MAILED

Ms. Elizabeth O'Donnell
Executive Director
Public Service Commission
211 Sower Boulevard
Frankfort, KY 40602

RECEIVED

DEC 22 2005

PUBLIC SERVICE
COMMISSION

Re: PSC Case No. 2005-00053

Dear Ms. O'Donnell:

Please find enclosed for filing with the Commission in the above-referenced case an original and ten (10) copies of the Supplemental Prepared Testimony of David Eames, which contains analyses of the timing of the installation of proposed combustion turbine units at the J. K. Smith Generating Station. Also attached to this testimony is a schedule of projected operation of the Smith Station combustion turbines, after construction of the proposed units on the current schedule. This testimony is submitted in response to information requests made at the hearing in this case on November 29, 2005.

Very truly yours,

Charles A. Lile
Senior Corporate Counsel

Enclosures

Cc: Service List

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

RECEIVED

In the Matter of:

DEC 22 2005

PUBLIC SERVICE
COMMISSION

THE APPLICATION OF EAST KENTUCKY POWER)
COOPERATIVE, INC. FOR A CERTIFICATE OF)
PUBLIC CONVENIENCE AND NECESSITY, AND A)
SITE COMPATIBILITY CERTIFICATE, FOR THE) CASE NO. 2005-00053
CONSTRUCTION OF A 278 MW (NOMINAL))
CIRCULATING FLUIDIZED BED COAL FIRED UNIT)
AND FIVE 90 MW (NOMINAL) COMBUSTION)
TURBINES IN CLARK COUNTY, KENTUCKY)

SUPPLEMENTAL PREPARED TESTIMONY OF
DAVID G. EAMES ON BEHALF OF
EAST KENTUCKY POWER COOPERATIVE, INC.

Q. Please state your name and address.

A. My name is David G. Eames and my address is 143 Greenwing Court, Georgetown,
Kentucky 40324.

Q. By whom are you employed and in what capacity?

A. I am employed by East Kentucky Power Cooperative, Inc. ("EKPC") and I am Vice
President, Finance and Planning.

Q. Have you previously filed prepared testimony in this case?

A. Yes, I filed testimony that was designated as Exhibit 8 to EKPC's Application in this
case.

Q. At the hearing in this case on November 29, 2005, you testified that there have been
delays in EKPC's plans for the construction of transmission facilities to provide

export capacity for all of the new combustion turbines at the J.K. Smith Station site, which are proposed in this case. Have you confirmed the schedule for the installation of such transmission facilities?

A. Yes, I have confirmed that EKPC's current transmission plans call for a rebuild of an existing 69 kV transmission line to a double circuit 345 kV/69 kV line, the J K Smith-Sideview line, by the summer of 2007. This would provide transmission outlet capacity for the proposed Smith CT 8, which is now scheduled for commercial operation in January, 2008. Transmission capacity that would allow the remaining proposed combustion turbines, which are now scheduled for installation between March and July of 2008, to operate simultaneously with Smith CT 8 and the existing seven combustion turbines, would not be available until the completion of the J K Smith-Bryantsville 345 kV line, which is scheduled for operation in July 2009.

Q. Those dates represent a change in the schedule for the commercial operation of the proposed facilities, compared to the schedules which were submitted with the Application in this case. Why have these schedules changed?

A. The implementation of the power supply plan initiated by RFP No. 2004-01 included the addition of transmission facilities to provide outlet capacity for Smith CTs 8-12, according to the schedule in the January 31, 2005 certificate filing in this case. It was expected that adequate outlet capacity for the full output of all of the Smith CTs would be available when needed. However, due to delays in the regulatory process and the expected time required to get the necessary air and environmental permits, as well as the large volume of transmission projects EKPC has in progress, the schedules for bringing on Smith CTs 8-12 and construction of the necessary transmission

facilities have gotten somewhat out of sync. The need for the capacity of the units is still there, regardless of the fact that the construction schedules now result in a period of eighteen months where only eight of the twelve combustion turbines can operate simultaneously.

Q. Has EKPC conducted an analysis to determine whether a delay of the commercial operation of Smith CTs 9-12, until the completion of the J K Smith-Bryantsville 345 kV line, would be more economical than the current plans?

A. My staff performed an analysis of a delay of Smith CTs 9-12 commercial operation until 2009, compared to the current plans, which assume that transmission would be available for the operation of eight combustion turbines at the Smith Station site in mid-2007. With the existing schedule, it is assumed that the proposed new combustion turbines would be economically dispatched, and would operate more frequently than the existing combustion turbines, due to their much higher fuel efficiency. The results of that analysis are attached as Exhibit 1 to this testimony. That analysis shows that a delay in Smith CTs 9-12 is estimated to result in approximately \$11.9 million in higher power production and/or power purchase costs, and \$10.9 million in additional costs due to construction schedule delay charges, as detailed in the attached letter from General Electric (Exhibit 2), for a total additional cost of \$22.8 million.

Q. At the hearing in this case on November 29, 2005, EKPC was asked to provide a five year projection of the hours of operation of the combustion turbines at Smith Station. Has EKPC prepared a projection of the hours of operation of combustion turbines at

Smith Station if the proposed combustion turbines are constructed on the current schedule?

A. Yes. A five year schedule of projected operation of the Smith Station combustion turbines, starting with the installation of the proposed new combustion turbines in 2008, is attached as Exhibit 3.

Q. Since the hearing in this case on November 29, 2005, has EKPC re-evaluated its plans for the construction of new transmission facilities to support the addition of new generating units at the J. K. Smith Generating Station?

A. Yes, EKPC has reviewed its existing transmission construction plans in regard to the addition of new generating units at Smith Station, and has considered revisions to those plans which might advance transmission projects which have been tentatively planned for potential future capacity additions at the J. K. Smith Station, beyond the circulating bed unit and combustion turbines proposed in this case. Some of those projects have the potential to increase the transmission output capacity from Smith Station, prior to the completion of the transmission facilities that are currently planned.

Q. Has EKPC conducted an economic analysis to determine if the costs of the acceleration of any such transmission projects are justified by any benefits of increasing the Smith Station transmission outlet capacity prior to 2009?

A. An analysis has been done to compare the system power production costs, assuming the current base case schedule for the combustion turbines, with and without the operating limitations due to the JK Smith-Bryantsville 345 kV line not being in service until July 2009. The analysis, results of which are attached hereto as Exhibit

4, showed that an estimated \$2.9 million could be saved if the transmission-related operating limitations were eliminated by March, 2008. A more detailed evaluation of the transmission projects would need to be made, to compare their cost to the production cost savings and determine which ones would provide the most economic benefits, and to determine whether any of the upgrades should be pursued to increase the outlet capacity prior to July 2009.

Q. Does EKPC plan to conduct such a detailed analysis and to pursue such transmission upgrade projects which promise the most economic benefits?

A. It is expected that such an analysis will be performed in the near future and recommendations made as to which, if any, transmission upgrade projects to pursue.

Q. Could you summarize the conclusions that EKPC has drawn from the analyses that have been conducted.

A. The results of the two analyses that have been performed show that installing the proposed CTs on the 2008 schedule, and without transmission limitations (Case 1) is the lowest cost scenario. Installing the CTs on the 2008 schedule, with the transmission limitations (Case 2), is a higher cost scenario by an estimated \$2.9 million. However, installing the CTs on the 2009 schedule (Case 3) is a higher cost scenario by \$22.8 million compared to Case 2. Having the proposed lower cost CTs available is the primary factor in holding down the production cost.

Q. Does this conclude your testimony?

A. Yes.

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF EAST KENTUCKY POWER)
 COOPERATIVE, INC. FOR A CERTIFICATE OF)
 PUBLIC CONVENIENCE AND NECESSITY, AND A)
 SITE COMPATIBILITY CERTIFICATE, FOR THE) CASE NO. 2005-00053
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 AND FIVE 90 MW (NOMINAL) COMBUSTION)
 TURBINES IN CLARK COUNTY, KENTUCKY)

AFFIDAVIT

STATE OF KENTUCKY)
)
 COUNTY OF CLARK)

David G. Eames, being duly sworn, states that he has read the foregoing prepared testimony and that he would respond in the same manner to the questions if so asked upon taking the stand, and that the matters and things set forth therein are true and correct to the best of his knowledge, information and belief.

David G. Eames
 David G. Eames

Subscribed and sworn before me on this 21st day of December, 2005.

Della E. Dammor
 Notary Public

My Commission expires:

May 15, 2007

PSC Case No. 2005-00053

**JK Smith CT 9-12 Delay Cost Study
(Comparison of Case 2 and Case 3)**

EKPC Monthly Variable System
Cost, \$

	Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008	Nov-2008
Base (With Limits) CASE 2	-	-	29,243,606	31,033,478	34,180,048	37,973,380	40,831,656	37,357,988	28,191,484	29,849,478	34,317,784
Delay Case CASE 3	-	-	29,371,828	31,282,778	34,755,760	38,752,312	42,508,204	38,788,240	28,574,288	30,152,464	34,923,944
Delay Cost (Delay - Base)	-	-	128,222	249,300	575,712	778,932	1,676,548	1,430,252	382,804	302,986	606,160
Cumulative Delay Cost	-	-	128,222	377,522	953,234	1,732,166	3,408,714	4,838,966	5,221,770	5,524,756	6,130,916

Smith CTs 8-12 Commercial
Operation Schedule

Base Case (With Limits)	*Smith CT8 Jan 21	*Smith CT9 Mar 3	*Smith CT10 Apr 14	*Smith CT11 May 26	*Smith CT12 Jul 7
Delay Case	*Smith CT8 Jan 21				

EKPC Expected CT Operation

Mar 2008 - Sep 2009

Base (With Limits)

Total Hrs Online By Type of CT	Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008	Nov-2008
Smith 1-3 (ABB)	-	-	20	20	12	-	2	2	0	0	1
Smith 4-7 (GE 7EA)	-	-	219	283	255	478	514	303	31	93	143
Smith 8-12 (GE LMS100)	-	-	471	919	1,068	1,343	1,763	1,582	628	1,117	1,111

Delay Case

Total Hrs Online By Type of CT

Smith 1-3 (ABB)	-	-	31	35	68	105	401	257	27	19	70
Smith 4-7 (GE 7EA)	-	-	295	462	479	725	1,246	1,056	307	359	463
Smith 8-12 (GE LMS100)	-	-	281	467	458	412	432	399	249	381	365

Difference (Delay-Base)

Smith 1-3 (ABB)	-	-	12	15	56	105	399	255	27	19	69
Smith 4-7 (GE 7EA)	-	-	76	179	224	247	732	753	276	266	320
Smith 8-12 (GE LMS100)	-	-	(190)	(452)	(610)	(931)	(1,331)	(1,182)	(379)	(736)	(746)

PSC Case No. 2005-00053

**JK Smith CT 9-12 Delay Cost Study
(Comparison of Case 2 and Case 3)**

**EKPC Monthly Variable System
Cost, \$**

	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009	Sep-2009	Oct-2009
Base (With Limits) CASE 2	41,537,924	46,184,672	36,289,760	33,053,588	30,931,788	32,400,960	29,512,906	37,628,072	35,611,268	30,209,322	-
Delay Case CASE 3	42,126,280	47,001,516	36,821,988	33,945,080	31,526,602	32,795,882	29,741,596	38,705,272	36,063,856	30,356,048	-
Delay Cost (Delay - Base)	588,356	816,844	532,228	891,492	594,814	394,922	228,690	1,077,200	452,588	146,726	-
Cumulative Delay Cost	6,719,272	7,536,116	8,068,344	8,959,836	9,554,650	9,949,572	10,178,262	11,255,462	11,708,050	11,854,776	

*Smith CTs 8-12 Commercial
Operation Schedule*

Base Case (With Limits)

Delay Case

**Smith CT9
Apr 1*

**Smith CT10
Jun 1*

**Smith CT11
Aug 1*

**Smith CT12
Oct 1*

EKPC Expected CT Operation

Mar 2008 - Sep 2009

Base (With Limits)

Total Hrs Online By Type of CT	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009	Sep-2009	Oct-2009
Smith 1-3 (ABB)	1	2	2	1	1	3	1	173	137	7	-
Smith 4-7 (GE 7EA)	251	365	216	160	210	345	246	897	762	270	-
Smith 8-12 (GE LMS100)	1,623	1,967	1,661	1,430	1,966	2,071	1,347	2,040	1,952	1,735	-

Delay Case

Total Hrs Online By Type of CT

Smith 1-3 (ABB)	126	186	127	140	121	103	53	380	212	13	-
Smith 4-7 (GE 7EA)	706	954	783	697	744	635	524	1,242	959	391	-
Smith 8-12 (GE LMS100)	438	504	448	460	1,053	1,016	982	1,314	1,640	1,491	-

Difference (Delay-Base)

Smith 1-3 (ABB)	126	184	126	138	120	101	52	207	75	6	-
Smith 4-7 (GE 7EA)	455	589	567	537	534	290	278	345	197	121	-
Smith 8-12 (GE LMS100)	(1,185)	(1,463)	(1,213)	(971)	(913)	(1,055)	(365)	(726)	(313)	(244)	-



GE Energy

Christopher R. Stewart
Project Manager

GE Energy
Aero Energy
16415 Jacintport Blvd.
Houston, TX 77015
Tel. 281-864-2670 DC 8'326-2670
Fax 281-864-2117
E:mail:
Christopher.stewart@ps.ge.com

December 6, 2005

To: Tom Edwards

Subject: RE: Cost of delay for EKPC Units 9,10,11,12

Dear Sir,

We are pleased to provide the following response to you inquiry with regards to a cost estimate based on a schedule delay per the existing agreement for the J.K. Smith Power Plant Project.

Per your request, GE Energy's budgetary estimate is based on the following:

Construct Unit 8 on the present construction schedule. Delay the construction, installation and delivery of Units 9, 10, 11 and 12 to support the following Final Completion Dates, FCD: Unit 9 FCD to April 1, 2009; Unit 10 FCD date to June 1, 2009; Unit 11 FCD date to August 1, 2009; and Unit 12 FCD date to October 1, 2009.

One item of key importance is the delay between the completion of the manufacturing of Unit 8 and the remaining four (4) Units. Unit 8 will be designed and manufactured to our current standard. However, we are contemplating changes to that standard, in part to improve our ability to manufacture and transport the units. Units 9-12 will incorporate the new standard and would be identical to each other but not to Unit 8. No change in unit performance, including output and heat rate will occur.

The following cost estimates are based on the schedule you specified, as detailed above. The following estimates represent the increase in the total price for equipment and services.

In addition we have noted above that these figures are budgetary. This is due to the fact that GE has not had sufficient time to discuss material and labor escalation potential with contractors in Kentucky. Should GE be required to provide a firm number we would need additional time in order to pull together a firm estimate.

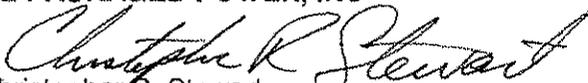
PKG/ BOP Equipment: \$ 7,700,000

Construction/ Engineering Services: \$3,200,000

Total: \$10,900,000

Best Regards,

GE PACKAGED POWER, INC


Christopher R. Stewart
Project Manager

CC: Brian Rodgers, John Patton Mark Hunt, Michael Storm

EKPC Expected CT Operation
Case 2 (Base With Limits)

	Total Hrs Online By Type of CT				
	Tot-2008	Tot-2009	Tot-2010	Tot-2011	Tot-2012
Smith 1-3 (ABB)	197	384	374	369	292
Smith 4-7 (GE 7EA)	3,770	4,224	2,971	3,327	2,772
Smith 8-12 (GE LMS100)	<u>12,178</u>	<u>20,242</u>	<u>15,594</u>	<u>16,732</u>	<u>14,044</u>
Total Hrs Online	16,145	24,850	18,939	20,427	17,109

PSC Case No. 2005-00053

**JK Smith CT Output Limitation Study
(Comparison of Case 1 and Case 2)**

**EKPC Monthly Variable System
Cost, \$**

	Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008	Nov-2008
Base (With No Limits) CASE 1	-	-	29,224,340	31,036,054	34,162,696	37,859,016	40,398,584	37,155,048	28,190,964	29,831,236	34,287,264
Base (With Limits) CASE 2	-	-	29,243,606	31,033,478	34,180,048	37,973,380	40,831,656	37,357,988	28,191,484	29,849,478	34,317,784
Limit Cost (WithLimits-NoLimits)	-	-	19,266	(2,576)	17,352	114,364	433,072	202,940	520	18,242	30,520
Cumulative Limit Cost	-	-	19,266	16,690	34,042	148,406	581,478	784,418	784,938	803,180	833,700

*Smith CTs 8-12 Commercial
Operation Schedule*

Base (With No Limits)	*Smith CT8 Jan 21		*Smith CT9 Mar 3	*Smith CT10 Apr 14	*Smith CT11 May 26		*Smith CT12 Jul 7				
Base (With Limits)	*Smith CT8 Jan 21		*Smith CT9 Mar 3	*Smith CT10 Apr 14	*Smith CT11 May 26		*Smith CT12 Jul 7				

EKPC Expected CT Operation

Mar 2008 - Sep 2009

Base (With No Limits)

Total Hrs Online By Type of CT	Jan-2008	Feb-2008	Mar-2008	Apr-2008	May-2008	Jun-2008	Jul-2008	Aug-2008	Sep-2008	Oct-2008	Nov-2008
Smith 1-3 (ABB)	-	-	20	22	29	50	88	58	3	2	36
Smith 4-7 (GE 7EA)	-	-	220	290	279	505	681	438	41	117	270
Smith 8-12 (GE LMS100)	-	-	466	920	1,076	1,367	1,823	1,626	636	1,127	1,170

Base (With Limits)

Total Hrs Online By Type of CT

Smith 1-3 (ABB)	-	-	20	20	12	-	2	2	0	0	1
Smith 4-7 (GE 7EA)	-	-	219	283	255	478	514	303	31	93	143
Smith 8-12 (GE LMS100)	-	-	471	919	1,068	1,343	1,763	1,582	628	1,117	1,111

Difference (WithLimits-NoLimits)

Smith 1-3 (ABB)	-	-	(0)	(2)	(17)	(50)	(86)	(57)	(3)	(2)	(35)
Smith 4-7 (GE 7EA)	-	-	(1)	(7)	(24)	(27)	(167)	(135)	(10)	(24)	(127)
Smith 8-12 (GE LMS100)	-	-	5	(1)	(8)	(24)	(60)	(44)	(8)	(10)	(59)

PSC Case No. 2005-00053

**JK Smith CT Output Limitation Study
(Comparison of Case 1 and Case 2)**

EKPC Monthly Variable System
Cost, \$

	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009	Sep-2009	Oct-2009
Base (With No Limits) CASE 1	41,203,576	45,421,560	35,895,832	32,972,300	30,652,260	32,271,536	29,403,622	37,628,072	35,611,268	30,209,322	-
Base (With Limits) CASE 2	41,537,924	46,184,672	36,289,760	33,053,588	30,931,788	32,400,960	29,512,906	37,628,072	35,611,268	30,209,322	-
Limit Cost (WithLimits-NoLimits)	334,348	763,112	393,928	81,288	279,528	129,424	109,284	-	-	-	-
Cumulative Limit Cost	1,168,048	1,931,160	2,325,088	2,406,376	2,685,904	2,815,328	2,924,612	2,924,612	2,924,612	2,924,612	

*Smith CTs 8-12 Commercial
Operation Schedule*

Base (With No Limits)

Base (With Limits)

EKPC Expected CT Operation

Mar 2008 - Sep 2009

Base (With No Limits)

Total Hrs Online By Type of CT	Dec-2008	Jan-2009	Feb-2009	Mar-2009	Apr-2009	May-2009	Jun-2009	Jul-2009	Aug-2009	Sep-2009	Oct-2009
Smith 1-3 (ABB)	64	116	45	22	35	28	22	174	137	7	-
Smith 4-7 (GE 7EA)	419	625	330	238	342	433	288	898	761	271	-
Smith 8-12 (GE LMS100)	1,632	2,039	1,684	1,488	2,010	2,083	1,371	2,041	1,953	1,735	-

Base (With Limits)

Total Hrs Online By Type of CT

Smith 1-3 (ABB)	1	2	2	1	1	3	1	173	137	7	-
Smith 4-7 (GE 7EA)	251	365	216	160	210	345	246	897	762	270	-
Smith 8-12 (GE LMS100)	1,623	1,967	1,661	1,430	1,966	2,071	1,347	2,040	1,952	1,735	-

Difference (WithLimits-NoLimits)

Smith 1-3 (ABB)	(63)	(114)	(43)	(21)	(34)	(25)	(21)	(1)	(0)	0	-
Smith 4-7 (GE 7EA)	(168)	(260)	(114)	(78)	(132)	(89)	(42)	(1)	1	(1)	-
Smith 8-12 (GE LMS100)	(9)	(72)	(23)	(58)	(44)	(12)	(24)	(1)	(1)	0	-